

IN THE CLAIMS

1. (previously presented) A nuclear reactor core support apparatus for supporting fuel assemblies in a reactor pressure vessel including a core, said apparatus comprising:

a reactor core shroud;

a plurality of support beams coupled to said reactor core shroud; and

a plurality of removable support plates disposed on said plurality of support beams, each said removable support plate comprising a top surface, an opposing bottom surface, opposing sides, and a center axis extending through said opposing sides, and at least one groove in said bottom surface, each said groove extending along said bottom surface at a 45 degree angle with respect to said center axis, and sized to receive a portion of one of said support beams, said removable support plate in direct contact with said beam.

2. (previously presented) The apparatus according to Claim 1 wherein said plurality of support plates and said plurality of support beams form a core support.

3. (previously presented) The apparatus according to Claim 1 further comprising a support ring having an inner periphery and an outer periphery, said support ring attached to said core shroud, said plurality of support beams extending between said inner periphery, said plurality of support beams intersecting one another to form a support beam matrix.

4. (previously presented) The apparatus according to Claim 1 wherein each said removable support plate is removable from above said reactor core support apparatus.

5. (canceled)

6. (previously presented) The apparatus of Claim 1 wherein each said removable support plate comprising at least one support plate flow passage.

7. (previously presented) The apparatus according to Claim 6 wherein each said removable support plate comprising at least one removable support block disposed thereon, said removable support block having at least one support block flow passage in flow communication with one of said at least one support plate flow passage.

8. (previously presented) The apparatus according to Claim 7 wherein said removable support block comprising at least one flow inlet portion extending from one side of said removable support block, said at least one flow inlet portion providing flow communication to one of said at least one support block flow passage, said at least one flow inlet portion receivable within one of said at least one support plate flow passage.

9. (canceled).

10. (previously presented) The apparatus according to Claim 1 wherein each said support plate further comprises a guide tube opening, said guide tube opening comprising at least one cruciform shaped slot, said support plate further comprising a first groove, a second groove, a third groove and a fourth groove, said first, second, third and fourth grooves located in said bottom surface of said support plate and positioned around said guide tube opening.

11. (previously presented) The apparatus according to Claim 10 wherein at least two of said first groove, second groove, third groove and fourth groove extend along said bottom surface substantially parallel to each other, and

wherein one end of at least one of said first groove, second groove, third groove and fourth groove intersects with one end of at least one of said first groove, second groove, third groove and fourth groove.

12. (canceled).

13. (previously presented) A nuclear reactor comprising:

- a reactor pressure vessel;
- a reactor core located inside said reactor pressure vessel;
- a core shroud surrounding said core; and
- a core plate located inside said reactor pressure vessel, said core plate comprising:
 - a plurality of support beams coupled to said core shroud; and
 - a plurality of removable support plates disposed on said plurality of support beams, each said removable support plate comprising a top surface, an opposing bottom surface, opposing sides, and a center axis extending through said opposing sides, and at least one groove in said bottom surface, each said groove extending along said bottom surface at a 45 degree angle with respect to said center axis, and sized to receive a portion of one of said support beams, said removable support plate in direct contact with said beam.

14. (cancelled)

15. (previously presented) The nuclear reactor according to Claim 13 wherein each said removable support plate comprises at least one support plate flow passage.

16. (previously presented) The nuclear reactor according to Claim 15 wherein each said removable support plate comprises at least one removable support block disposed thereon, said at least one removable support block comprising at least one support block flow passage in flow communication with one of said at least one support plate flow passage.

17. (previously presented) The nuclear reactor according to Claim 16 wherein said at least one removable support block comprises at least one inlet flow projection extending from one side of said at least one removable support block and at least one flow outlet positioned on

an opposite side of said at least one removable support block, said at least one inlet flow projection receivable within one of said at least one support plate flow passage.

18. (previously presented) The nuclear reactor according to Claim 17 wherein said at least one removable support block comprises at least one internal flow passage providing flow communication between one of said at least one inlet flow projection and one of said at least one flow outlet.

19. (previously presented) The nuclear reactor according to Claim 18 wherein each said internal flow passage comprises a first channel and a second channel, said first and second channels located within said at least one removable support block.

20. (original) The nuclear reactor according to Claim 19 wherein said first channel has a first flow outlet and said second channel has a second flow outlet.